

ABSTRACT OF THE DISCLOSURE

A single-inductor dual-output buck converter and control method that facilitates power conversion by converting a single DC power source/supply into two separate DC outputs, each of which can be configured to provide a selected/desired voltage by selection of respective duty cycles. The topology of the inverter includes a pair of diodes or switches that can selectively re-circulate inductor current. The converter is generally operated at a fixed frequency with four stages of operation. A first and third stage of operation provide power to a first and second output, respectively. A second and fourth stage of operation re-circulate inductor current and can partially recharge a battery type power source. The power output for each stage (voltage and current) can be selectively obtained by computing and employing appropriate time periods for the stages of operation that correspond to appropriate duty cycles.